



US Army Corps  
of Engineers

# DCAF Bulletin

## Design Construction Analysis Feedback

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### CEMP-EC

**Subject:** Commissioning of HVAC Systems

**Applicability:** GUIDANCE

**Reference:** CEGS 15995 Commissioning of HVAC Specifications  
Air Force ETL 90-10 Commissioning of HVAC Systems

1. The purpose of this DCAF Bulletin is to cover the requirements for Commissioning of HVAC Systems. Recent field evaluations and customer evaluations have disclosed practices which are in need of improvement.
2. Commissioning of HVAC Systems is not being done on all Air Force projects. CEGS 15995 is mandatory for use on all Air Force projects and optional for Army work. This requirement is stated in the notes to the designer on the use of the guide specification. Air Force ETL 90-10 preceded CEGS 15995 mandating the HVAC commissioning process.
3. Many contractors are not scheduling sufficient time at the end of the contract for commissioning. Commissioning needs to be emphasized to the contractor during the Preconstruction Conference and discussed in detail during the Coordination Meeting Conference. Another important place it should be discussed is during review of the contractors Network Analysis System (NAS) or bar chart submission. Commissioning of HVAC systems shall begin only after all work required in related sections, including Sections HVAC Controls Systems and Testing, Adjusting, and Balancing of HVAC Systems has been successfully completed. All test and inspection reports and O&M manuals shall be submitted and approved before commissioning is conducted. The Area/Resident Engineer should carefully review the contractor's progress schedule to ensure sufficient time and resources are assigned to the commissioning process near the end of construction. Appropriate progress payments must be retained and held until completion of the commissioning process.
4. Funds for the HVAC Commissioning process are not being included or identified for planning, design and commissioning activities. During the programing phase the money for commissioning should be identified. Planning and design (P&D) funds are utilized for the designers development of the commissioning specification prior to construction contract award. Sufficient funding from P&D funds should be reserved for the designers of record to participate in the commissioning process to confirm his design criteria has been met through the HVAC commissioning process. Appropriate funding must be maintained throughout the construction period for Government participation in the commissioning process. The designer and the using

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agent must be kept informed of any changes in the contractor's schedule which affect the timing of the commissioning process.

5. Frequently the Design Agent's and Using Agency's Representative are not represented on the commissioning team. Commissioning which includes pre-commissioning, checks and functional performance testing shall be performed by a team made-up of the following members.

Q	Contractor's Chief Quality Control Representative
M	Contractor's Mechanical Representative
E	Electrical Representative
T	Contractor's Testing, Adjusting, and Balancing Representative
C	Contractor's Control Representative
D	Design Agent's Representative
O	Contracting Officer's Representative
U	Using Agency's Representative

Commissioning is documented with checklists provided in the contract specifications. Acceptance by each commissioning team member of each pre-commissioning checklist item shall be indicated by initials and dated. Acceptance by each commissioning team member of each functional performance test checklist shall be indicated by signature and date. Participation by the designer and user's representative is critical to the commissioning process. Therefore, HQUSACE wants feedback on the projects that did not have a complete commissioning team and which member was not represented. This will be monitored by the DCE inspection team during their site visits.

6. The pre-commissioning checks are not being performed by field personnel if they feel it duplicates the checking, testing, and inspection methods established in the related sections. Requirements in related specification sections are independent from the requirements of CEGS 15995, Commissioning of HVAC Systems, and shall not be used to satisfy any of the requirements specified in CEGS 15995. The major reason for duplication of requirements is to ensure that the contractor's Quality Control Program is functioning effectively and that the construction end product complies with the contract plans and specifications.

7. The Functional Performance tests are being performed before all pre-commissioning checks have been successfully completed and all deficiencies corrected, CEGS 15995 Commissioning of HVAC Systems requires functional performance tests shall begin only after all pre-commissioning checks have been successfully completed. During the Preconstruction and Coordination meetings this process should be addressed and the contractor should detail who is

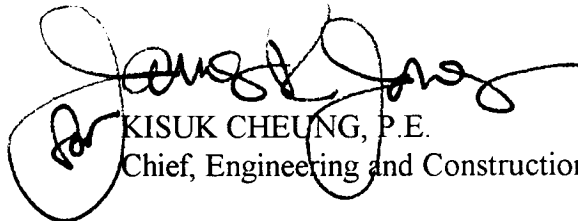
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going to do the functional performance testing, whose instruments will be used and the accuracy of those instruments. It is recommended that the HVAC commissioning contractor provide these instruments. Functional Performance tests shall prove all modes of the sequences of operation. Tests shall begin with equipment or components and shall progress through subsystems to complete systems. Any deficiencies or failures noted shall be corrected in accordance with applicable contract requirements. Each test shall be repeated until it has been completed with no errors.

8. CEGS 15995 Commissioning of HVAC Systems is not consistently being edited to make it job specific. The appropriate checklist should be included in the contract specification and identified for each HVAC equipment component. The designer needs to add checklists for equipment or systems not included in the CEGS 15995 and modify the checklists where necessary for specific project requirements. During the BCOE review make sure the checklists have been edited to reflect project requirements.

This DCAF Bulletin has been coordinated with the Directorate of Civil Works, Operations, Construction and Readiness Division (CECW-OC). Point of Contact is Gary Bauer (CEMP-EC) at 202-761-0205.



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